

```
In[6]:=  $\rho$  = Import[NotebookDirectory[] <> "pset1.txt",  
          "Data"];  
MaxMixed[d_] := IdentityMatrix[d] / d;
```

```
In[8]:= (* a *)  
d = Dimensions[ $\rho$ ][[1]]
```

Out[8]= 17

```
In[12]:= (* b *)  
Eigenvalues[ $\rho$ , 1]
```

Out[12]= {1.000000000000000000000005}

```
In[13]:= (* c *)  
p = 0.7;  
 $\sigma$  = (1 - p)  $\rho$  + p MaxMixed[d];  
Eigenvalues[ $\sigma$ , 1]
```

Out[15]= {0.341176}

```
In[16]:= (* d *)  
Total@Abs@Eigenvalues[ $\sigma$  - MaxMixed[d]]
```

Out[16]= 0.564706

```
In[17]:= (* e *)  
Diagonal[ $\sigma$ ];  
Min[%]  
Position[%%, %][[1, 1]] - 1
```

Out[18]= 0.0417391

Out[19]= 4